Historic Resources

August 2006

Yukon
Energy, Mines and Resources

DISCLAIMER

Nothing in the Yukon Government Oil and Gas Best Management Practices documents, maps, references, etc, shall be construed as waiving compliance with regulatory requirements imposed by law. It remains the responsibility of commercial or industrial operators to satisfy themselves that the measures adopted in the specific instance are appropriate to the situation and satisfy all legal requirements within the jurisdiction. Legal requirements may be imposed by Territorial, First Nation or Federal regulatory bodies.

Specific BMPs for specific problems cannot be given since solutions will, of necessity, be site and issue specific. Narrative BMPs are given indicating the type of measure which may be useful. Technical engineering prescriptions on how to build specific works or devices are beyond the scope of this project and the assistance of consulting engineering firms is recommended if you do not know how to construct, maintain or operate the relevant BMP or device.

Mention of trade names, commercial products or machinery does not constitute endorsement, or recommendation for use.

This guide is intended to provide users with up-to-date information about best management practices for oil and gas exploration on the Yukon Landscape but this project should not be considered as complete. There are both known and unknown sources of data which have not yet been incorporated and topics which have not yet been treated or addressed. These topics and data will be incorporated and new versions of the documents uploaded as time and resources permit.

By their very nature many specific BMPs soon become obsolete as "better" BMPs become available but the concept and the identified objectives behind the examples remain valid.

Any comments, questions, or suggestions regarding the content of this document may be directed to:

Oil and Gas Management Branch
Energy Mines and Resources
Yukon Government
Suite 300-211 Main Street
Whitehorse, Yukon Y1A 2B2
Phone: (867) 393-7424
Fax: (867) 393-6262

All photos courtesy of Yukon Government except as otherwise noted.

Table of Contents

1. Objectives 4

2. Rationale -
Potential impacts to heritage resources as a result of land use/land altering activities 4
Brushing/Clearing – Level 0 Impact 4
Road Use and Increased Vehicle Access - Level 0 Impact 5
Winter Road, Landing and Airstrip Construction – Level 1 Impact 5
Summer Road, Landing and Airstrip Construction – Level 2 Impact 5
Stream Crossings - Level 2 Impact 6
Subsurface Ground Disturbance - Level 2 Impact 6
Flooding - Level 2 Impact 6

3. Context of Historic Resource Protection and Management 7
Legislative Context 8

4. Best Management Practices 9
Historic Resource Protection and Management for Geophysical Exploration 9
Palaeontological Resource Protection and Management for Geophysical Exploration 10
Historic Resource Protection and Management for Advanced Oil and Gas Projects 11

5. Definition and Identification of Areas of High Heritage Potential 12
Definitions 12
Identifying Areas of High Heritage Potential 13
Obtaining information about Archaeological, Palaeontological and Historic Sites for an Area 15

6. References: 16
Yukon Government Links 16
Policy and Guidelines 16
Legislation 16

7. Spatial Data 16

1. Objectives

To protect and manage historic sites and resources, and to protect burials outside of known cemeteries.

White River First Nation and Yukon Heritage Resources researchers at Copper City

Historic grave fences at the Forty Mile Historic Site

2. Rationale - Potential impacts to heritage resources as a result of land use/land altering activities

The following outlines the various types land use/land altering impacts that may affect heritage sites in the Yukon. Three levels of impact (designated level 0 - 2) are identified:

Level 0 impacts relate to developments that result in only minor clearing of surface vegetation.

Level 1 impacts relate to developments that result in significant clearing of surface vegetation.

Level 2 impacts relate to those developments where Level 0 and Level 1 impacts occur in combination with significant surface and subsurface ground disturbance.

Brushing/Clearing – Level 0 Impact

Brushing of vegetation may impact surface or built heritage sites such as brush camps or burial sites. Some disturbance of the ground surface occurs with mechanical brushing, which may displace or destroy historic objects in the upper levels of the ground.

The presence of trained environmental or heritage monitors would assist in addressing concerns with impacts on surface and built heritage. It is anticipated that these kinds of features would be recognized and avoided by field crews.

Road Use and Increased Vehicle Access - Level 0 Impact

Increased access to back country as a result of the construction of roads can lead to the disturbance of heritage sites and features. Previously isolated sites may become the focus of looting or may be disturbed or destroyed by visitors.

Winter Road, Landing and Airstrip Construction – Level 1 Impact

Winter: Winter roads generally do not result in impacts on buried heritage sites and resources; surface sites such as brush camps and graves however, are vulnerable to winter road construction impacts.

Winter road construction

Summer Road, Landing and Airstrip Construction – Level 2 Impact

Summer: Ground disturbance associated with summer access road construction results in significant impacts to heritage sites. The construction of summer roads can lead to the destruction of whole or partial sites depending on if the site is surficial, shallowly buried or deeply buried. Linear heritage features such as traditional or historic trails could be significantly impacted by multiple crossings of or continuous construction along the route.

Summer road construction

Summer exploration camps with air strip

Stream Crossings - Level 2 Impact

Summer: The construction of a stream crossing often requires the physical modification of stream banks and can result in significant disturbance of surface or buried heritage sites. The majority of heritage sites occur within 100 metres of water bodies such as streams, rivers, lakes and ponds, and any ground disturbance in this zone has an increased likelihood of impacting heritage resources.

Winter: Where construction of an ice bridge requires that the grade of stream bank be modified, the potential for impact on heritage resources is as for summer crossings.

Subsurface Ground Disturbance - Level 2 Impact

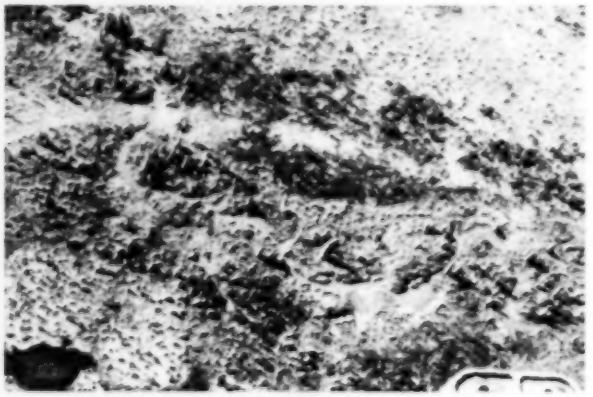
These activities are most likely to impact subsurface heritage sites, with impacts increasing proportional to the area/extent of the ground disturbance.

Flooding - Level 2 Impact

Significant impacts on heritage resources if areas are inundated.

Flooding resulting from road contruction.

Winter stream crossing.



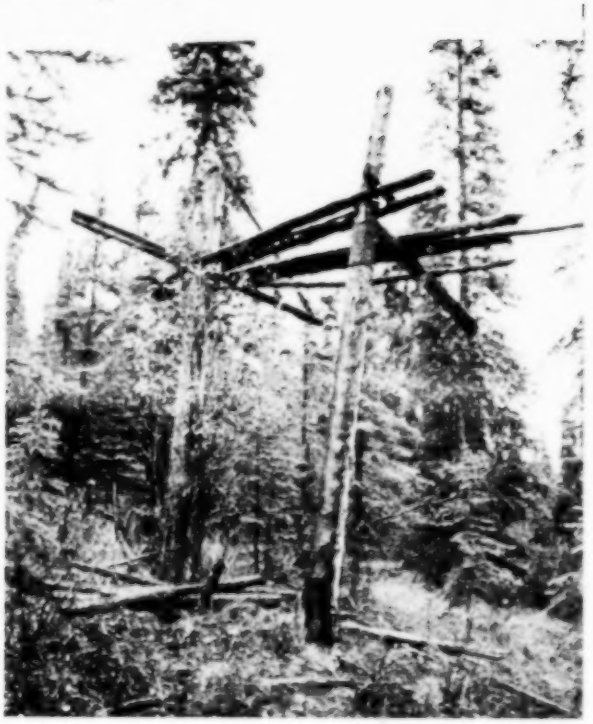
Summer view of winter stream crossing.

3. Context of Historic Resource Protection and Management

Historic resources exist throughout the Yukon landscape in all terrains including mountain tops, and even under water. Remains of built heritage in many instances are fragile due to their age and composition, which is frequently wood or other organic materials.

Stage cache collapsed

Test excavation near a relatively recent brush camp



Stage cache

Archaeological remains that date to the historic period or that are thousands of years old are often buried in only a few centimetres of soil. Even minor disturbance of the ground surface can impact on archaeological sites. All heritage resources are vulnerable to looting or unauthorized collection and increased activity in a previously isolated area may see the loss of irreplaceable objects that are part of Yukon's history.

Inventories of historic resources are lacking for many regions of the Yukon. Many remote areas have never been surveyed and the historic resources are not adequately documented. The effects of projects, activities and land disposals on historic resources must therefore address protection of documented heritage and make provision for avoidance of undocumented resources through planning, heritage potential modeling, and historic resource impact assessment.

Legislative Context

Historic resources are protected from disturbance under the *Yukon Historic Resources Act* - Yukon Archaeological Sites Regulations. The Government of Yukon is responsible for managing historic sites on non-settlement land and outside of national parks. Protection of archaeological sites and burials is addressed as well under the *Territorial Lands Act*, Section fifteen.

No one may search for, investigate, excavate, disturb or otherwise alter an historic site on Yukon lands except in accordance with a permit under the Yukon Archaeological Sites Regulations. No objects may be removed from a historic site without a permit under the Yukon Archaeological Sites Regulations. Permits are issued to qualified researchers only, usually professional or consulting archaeologists.

The Yukon Oil and Gas Geoscience Exploration Regulations specify requirements for the authorization, operation and reporting of all geoscience exploration in Yukon. Geoscience exploration for oil and gas includes geological operations, geophysical operations and test hole operations. The Yukon Oil and Gas Licence Administration Regulations specify additional general requirements for the licensing of all oil and gas activities. These regulations can be found on the Oil and Gas Management Branch web site or by calling 867-667- 3427.

The Geoscience Exploration Guidelines are provided for the general information of companies or individuals planning to conduct geoscience exploration for oil and gas in Yukon. The purpose of the guidelines is to provide information about how to apply for a Geoscience Exploration Licence; apply for an amendment to an existing Geoscience Exploration Licence; submit reports during and after operations; and ensure that all policies and procedures are met for every geoscience operation.

In relation to cultural and archeological resources, the guidelines require that the location of the operation in relation to cultural features be provided (including known historic sites and results of any archaeological assessments), and for seismic lines that intersect or approach known archaeological sites or First Nation burial sites, a description of the site and the measures that will be taken to ensure the site is not disturbed be provided.

Activities involving land disposal, land use or permits reviewed under the *Yukon Environmental and Socioeconomic Assessment Act* (YESAA) Regulations may require the proponent to provide adequate information to allow the evaluation of the likelihood and significance of adverse effects of the project on heritage resources, and identify proposed mitigation measures.

Heritage sites, and access to information about them, are protected by legislation in the Yukon. Please note that documents submitted to the YESAA Designated Offices or the Yukon Environmental and Socio-Economic Assessment Board (YESAB), the Yukon Water Board, or to Yukon regulators in respect of a land use or land disposal are public documents. To protect archaeological sites, locations are not provided in public documents. Mapping is at 1:1,000,000 scale.

4. Best Management Practices

Historic Resource Protection and Management for Geophysical Exploration

Heli-portable seismic survey

- Identify and map all known historic sites in the project area prior to field operations to assist in planning access, seismic and related activities. Information on the location of known sites (historical, archaeological and palaeontological) is available from the Heritage Resources Unit, Yukon Government. Information on traditional use sites and areas can be obtained from the First Nation(s) in whose territory the project is taking place.

- Seismic work, access development and other activities associated with a project should plan to avoid known sites and areas of high historic site potential and thereby limit any required field archaeological impact assessment work. For example, buffers of 60-100 metres along a terrace edge or bordering a water body will generally address heritage concerns.

- Techniques that minimize ground disturbance and clearing, such as heli-portable seismic survey and use of existing roads or winter access on frozen ground are recommended.

- An archaeological impact assessment is required where project activities result in Level 1 or Level 2 impacts to areas identified as having high heritage potential. In some instances, post impact assessment may be identified as an appropriate response.

- No disturbance is permitted to historic sites encountered during exploration activities. No objects may be removed from historic sites. Known historic sites must be buffered from exploration activities which may disturb the site. Buffers should be determined in consultation with the resource manager and First Nation as appropriate and may include visual buffering should the nature of the site warrant this. Territorial and federal law prohibits development activities within 30 metres of a known or suspected heritage site. Coordinates for any given site might vary by up to 200 metres. Because of the inaccuracy of site location data in the heritage Resources Unit Registry, a 200 metre buffer around sites is a recommended management approach.

• Should historic sites or resources be discovered during operations, all operations in the area will be suspended. Yukon Heritage Resources should be informed of the location and nature of the site. Environmental monitors may assist in this process. See also: the Handbook for the Identification of Heritage Sites and Features.

Palaeontological Resource Protection and Management for Geophysical Exploration

• In an area known to contain rich palaeontological resources, it is likely that the proposed activity will expose fossils, principally fossils of ice age mammals, which are protected under the *Historic Resources Act (HRA)*. The proponent should, to the best of their ability, set aside and protect fossils that are unearthed.

• Ivory from mammoth and mastodon tusks is also protected under the HRA. However, there are provisions and permits in place to sell and/or export ivory if it can be determined that the ivory is of limited scientific value relative to its artistic and economic value.

• In the event that mummified remains or intact skeletons are exposed, Yukon Palaeontology should be contacted before disturbing them further, as these findings are of considerable scientific importance. If attempts to make contact are unsuccessful the proponent is advised to move and/or protect the remains (with intact surrounding sediments) to the best of his/her ability until they can be collected and preserved by personnel from Yukon Palaeontology.

• Under the HRA, bones and other fossils are held in public trust by the Minister of Tourism and Culture, and should be conveyed to Yukon Palaeontology. Personnel from Yukon Palaeontology make regular visits to areas with known palaeontological resources to collect and preserve fossils unearthed by industrial activity.

• Contact the Yukon Palaeontology Unit, Department of Tourism & Culture, when bones, fossils, ivory, skeletons and mummified remains exposed/unearthed as soon as possible.

• Should human remains be identified during operations, all work shall cease immediately and the R.C.M.P notified. If the R.C.M.P. and Coroner determine that this is a historic burial, the First Nation and Yukon Heritage Resources will be notified. http://www.yukonheritage.com/07policy/07respectguide.pdf

Historic Resource Protection and Management for Advanced Oil and Gas Projects

The Project Description submitted for review under the *Yukon Environmental and Socio-Economic Assessment Act* should provide adequate information to allow the evaluation of the likelihood and significance of adverse environmental effects of the project on historic sites and resources, and identify proposed mitigation measures.

A Historic Resources Impact Assessment is normally undertaken for advanced projects and developments to provide information on project effects on historic resources and identify appropriate mitigation measures. The Impact Assessment is carried out by a qualified archaeologist.

Assessment is carried out conventionally in three stages:
(1) overview of historic resources within the project area;
(2) site assessment where project activities will impact historic resources or areas identified as high potential for historic resources; and
(3) mitigation of project impacts on historic resources.

Foreshaft of a throwing spear with stone point still attached with sinew. The artefact, obtained from the base of a melting snow patch, has ben radiocarbon dated to about 4500 BP.

The assessment is usually undertaken in cooperation with the First Nation(s) whose traditional territory is affected by the project and may address as well the location and mapping of traditional use sites and resource areas of concern to the First Nation, if the First Nation is in agreement. Yukon Archaeological Impact Assessment Guidelines are under development. The Archaeological Impact Assessment Guidelines in use by the Government of British Columbia may be referenced for a standard approach.

5. Definition and Identification of Areas of High Heritage Potential

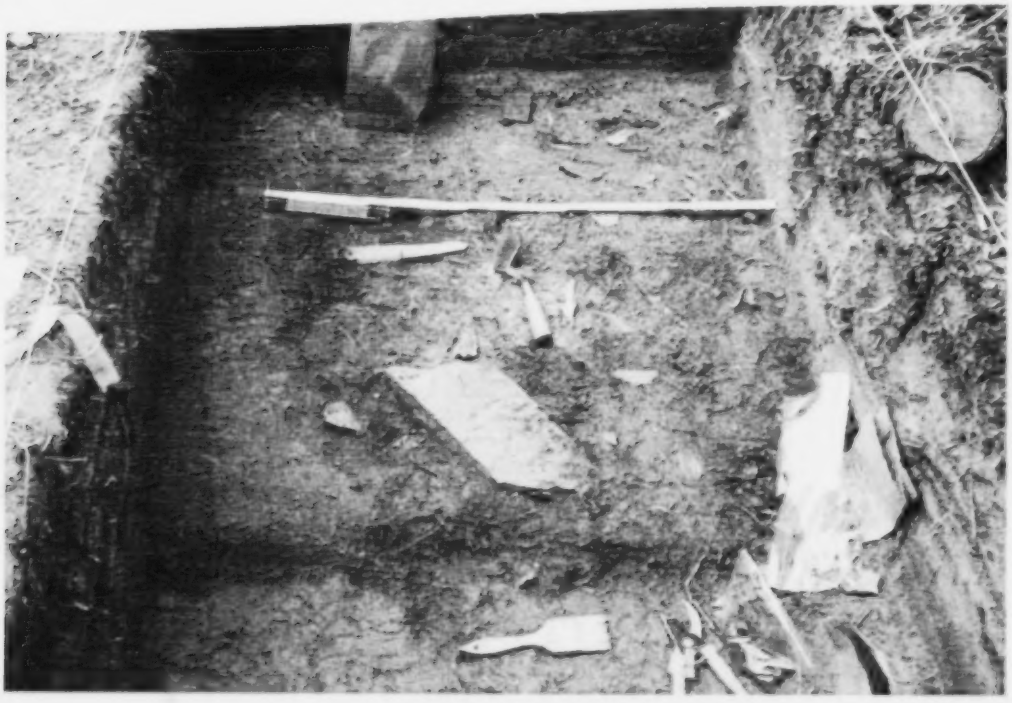
Definitions

Historic resources as defined in legislation include historical, archaeological and palaeontological sites and resources. Historic resources are abandoned sites and objects of greater than 45 years in antiquity. Cabins, caches, graves, brush camps, and other man-made structures, features or objects are the most readily recognized historic resources.

Historic artifacts associated with a collapsed cache.

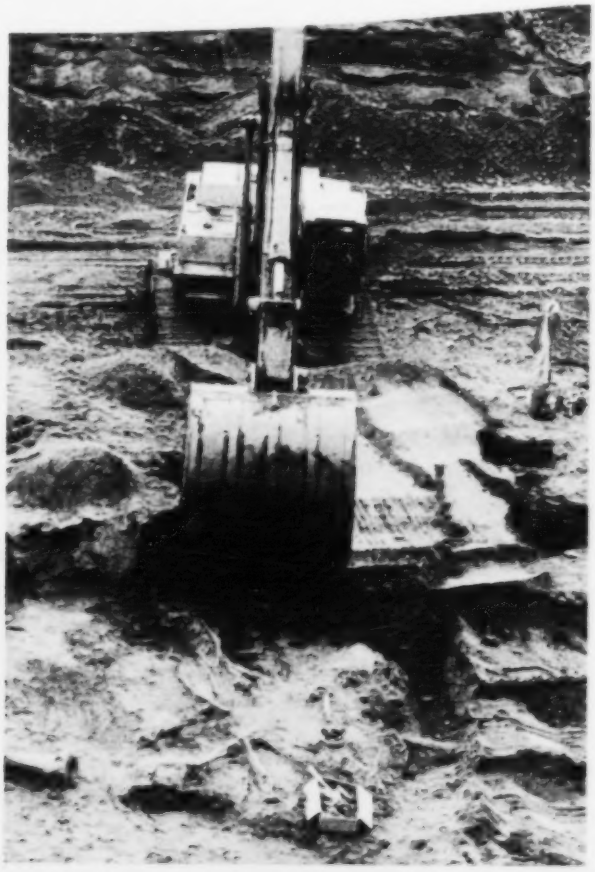
Archaeological sites tend to date to before European contact and are found on or under the ground surface, and generally consist of the remains of ancient camps, hearths, stone tools and debris.

Small white coloured fragments in the hearth are calcined bones.



Excavation of early historic occupation at the site of Forty Mile.

Palaeontological resources are fossil and other remains of extinct or prehistoric plants and animals. These include bones of mammoth, horse, bison and other ice age fauna as well as fossil remains and traces of plants, vertebrate and invertebrate fauna.



Uncovering the skeleton of a juvenile mammoth at Gold Run Creek

Identifying Areas of High Heritage Potential

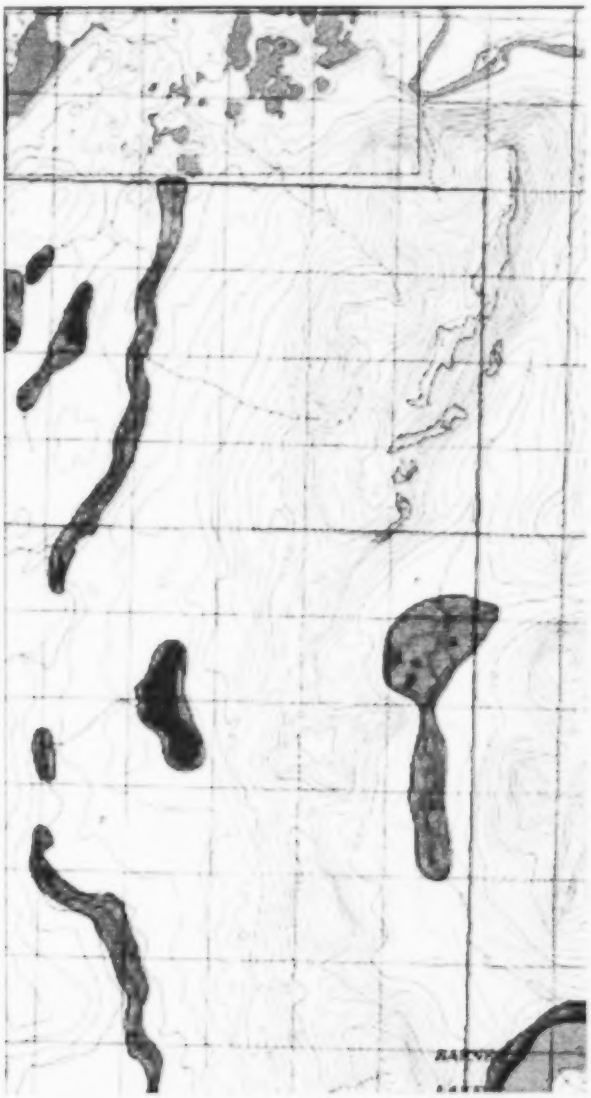
Based on known patterns of prehistoric and historic land use for a region, certain terrain types, localities and landscape features can be identified as likely locations for camps, travel routes or as strategic resource areas.

Zones of high archaeological potential in the Pelly Banks area

Generally, areas in proximity to water bodies, stream courses and wetlands, prominent lookout situations on terraces, ridges and knolls and combinations of these terrain zones are considered to be of high heritage potential. Depending on the region, other high potential localities may include shorelines of pro-glacial and neo-glacial lakes, meltwater channels, ancient river terraces and abandoned drainages. In unglaciated northern Yukon, both ancient landscapes and possibly different prey species must be factored in to reconstruction of past land use patterns.

These maps illustrate the mapping of zones of high heritage resource potential, e.g., within 100 metres of a water body, or on a topographic feature, such as a paleo-terrace, which is also a zone of high heritage potential.

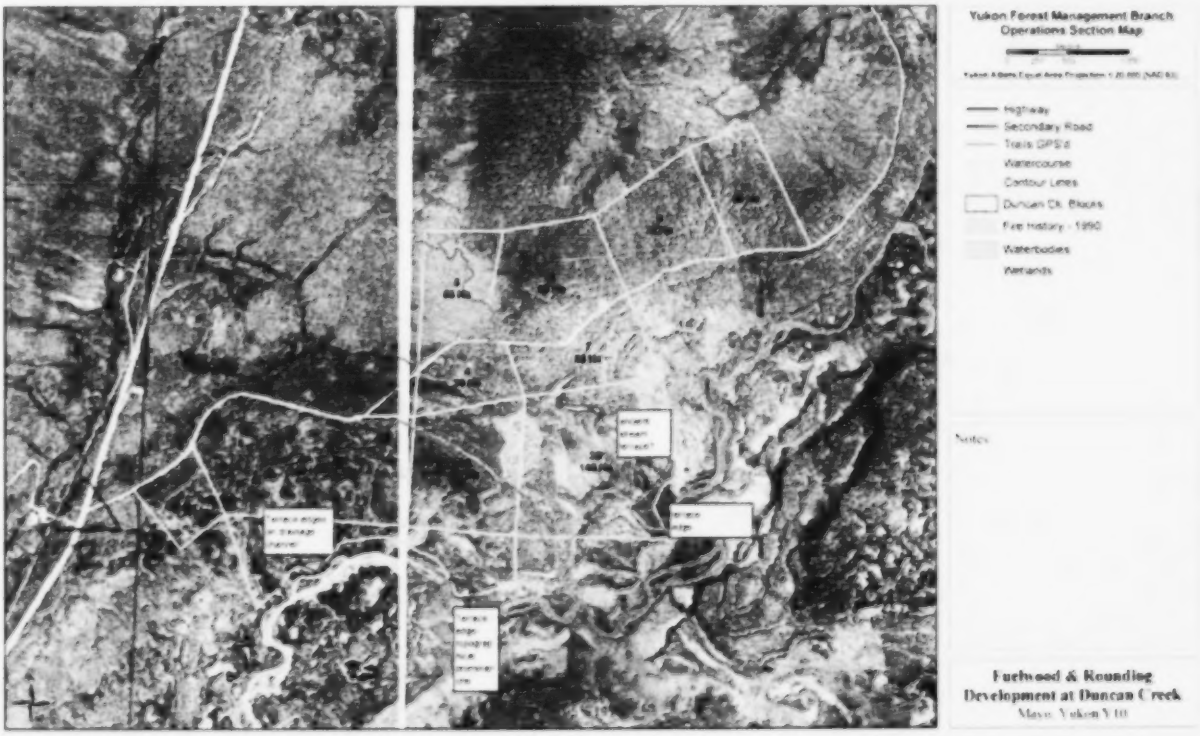
For more information go to "Heritage Potential Modeling Study of Southeast Yukon Forestry Planning"



Obtaining Information about Archaeological, Palaeontological and Historic Sites for an Area

Information on the location of known heritage sites in a development area can be obtained from the Yukon government Heritage Resources Unit.

Coordinates provided for some sites may not be precise. Information on sites has been gathered over many decades and most coordinates were obtained prior to precision GPS. Coordinates for any given site might vary by up to 200 metres. Site locations are provided as point data, usually marked at the centre of a site. Sites vary in extent and size however, and information regarding this is located in the site record. You should pay particular attention to this if you are planning development activities in the vicinity of an archaeological site. Territorial and federal law prohibits development activities within 30 metres of a known or suspected heritage site. Because of the inaccuracy of site location data in the Registry, a 200 metre buffer around sites is a recommended management approach.



6. References:

Legislation, Policy and Standards for Historic Site Conservation and Management

Yukon Government Links

Heritage Resources Unit
Heritage Resources Unit Archaeology Program
Heritage Resources Unit Paleontology Program
Heritage Resources Unit Historic Sites Program

Policy and Guidelines

Geoscience Exploration Guidelines
Guidelines for the Management and Protection of Historic Resources for Geoscience Exploration
Historic Resources Impact Assessment and Mitigation Requirements Related to Land Altering Developments
Guidelines Respecting the Discovery of Human Remains and First Nation Burial Sites in the Yukon
Guidebook on Scientific Research in the Yukon
Handbook for the identification of Heritage Sites and Features
Heritage Modeling Study of SE Yukon Forestry Planning
Overview Assessment of Potential Heritage Concerns in the East Hyland, Watson Lake, West Rancheria and Ross River Planning Areas
Parks Canada - Standards and Guidelines for the Conservation of Historic Places in Canada
Government of British Columbia Archaeological Impact Assessment Guidelines

Legislation

Yukon Historic Resources Act
Yukon Scientists and Explorer's Act
Yukon Archaeological Sites Regulations
Yukon Archaeological Sites Regulations Permit
Yukon Scientists and Explorer's Act (1958) Application for Licence
Oil and Gas Geoscience Exploration Regulations
Yukon Oil and Gas Licence Administration Regulations
Territorial Lands (Yukon) Act
Yukon Environment and Socioeconomic Assessment Act

7. Spatial Data

Yukon Department of Environment Geomatics Program
Yukon Geological Survey Map Gallery
Yukon Oil and Gas Management Branch Maps and Data